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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,894	12/19/2001	Jeong-Ki Park	8733.556.00	8841
30827	7590	12/22/2003	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			ERDEM, FAZLI	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/020,894	PARK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Fazli Erdem	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 6-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (5,760,854) in view of Kaneko et al. (6,146,796) further in view of Yamamoto et al. (5,530,568) further in view of He et al. (6,111,619) further in view of Lee et al. (2002/0101547).

Regarding Claims 1,2,6-18, Ono et al. disclose liquid crystal display apparatus where in order to provide a liquid crystal display apparatus having bright image display and a preferred production yield, a gate insulating film under a transparent pixel electrode on a transparent substrate is provided with an aperture smaller than a plane area of the pixel electrode and a source electrode pattern under the pixel electrode is composed so as to cross the aperture. End portions of the gate electrode and the laminate layer are tapered. Ono fail to disclose the required common line and the required conducting line structures, conductive line/substrate relationship and the conductive line/substrate relationship in the required manner. However, Kaneko et al. disclose a liquid crystal display where the required common line structure is disclosed. Furthermore, Yamamoto et al. disclose a matrix liquid crystal, display device having testing pads of transparent conductive film where the required conducting line structure is disclosed. He et al. disclose a method of forming polycrystalline silicon TFTs with TiN/Cu/TiN interconnections for a liquid crystal display pixel array where the required conductive

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line/substrate relationship is disclosed. Finally, Lee et al. disclose liquid crystal displays where the required conductive line/substrate relationship in the required manner is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the common line, the conducting line structures, conductive line/substrate relationship and the conductive line/substrate relationship in the required manner in Ono et al. as taught by Kaneko et al., Yamamoto et al., He et al., and Lee et al. respectively in order to have a liquid crystal display with better electrical conductivity characteristics.

2. Claims 3-5 rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (5,760,854) in view of Kaneko et al. (6,146,796) further in view of Yamamoto et al. (5,530,568) further in view of Hirakata et al. (6,239,854) further in view of He et al. (6,111,619) further in view of Lee et al. (2002/0101547).

Regarding Claims 3-5, Ono et al. disclose liquid crystal display apparatus where in order to provide a liquid crystal display apparatus having bright image display and a preferred production yield, a gate insulating film under a transparent pixel electrode on a transparent substrate is provided with an aperture smaller than a plane area of the pixel electrode and a source electrode pattern under the pixel electrode is composed so as to cross the aperture. End portions of the gate electrode and the laminate layer are tapered. Ono fail to disclose the required common line, the required conducting line structure, the required auxiliary pattern structures, conductive line/substrate relationship and the conductive line/substrate relationship in the required manner. However, Kaneko et al. disclose a liquid crystal display where the required common line structure is disclosed. Furthermore, Yamamoto et al. disclose a matrix liquid

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crystal, display device having testing pads of transparent conductive film where the required conducting line structure is disclosed. Hirakata et al. disclose a liquid crystal display device with an adjustment layer not connected to driving circuit to even out height difference in the sealant region where the required auxiliary pattern structure is disclosed. He et al. disclose a method of forming polycrystalline silicon TFTs with TiN/Cu/TiN interconnections for a liquid crystal display pixel array where the required conductive line/substrate relationship is disclosed. Finally, Lee et al. disclose liquid crystal displays where the required conductive line/substrate relationship in the required manner is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the common line, the conducting line structure, the auxiliary pattern structures, the conductive line/substrate relationship and the conductive line/substrate relationship in the required manner in Ono et al. as taught by Kaneko et al., Yamamoto et al., Hirakata et al., He et al. and Lee et al. respectively in order to have a liquid crystal display with better electrical conductivity characteristics.

3. Claims 19-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (5,760,854) in view of Kim (6,146,796) further in view of Johnson (4,630,355) further in view of He et al. (6,111,619) further in view of Lee et al. (2002/0101547).

Regarding Claims 19-27, Ono et al. disclose liquid crystal display apparatus where in order to provide a liquid crystal display apparatus having bright image display and a preferred production yield, a gate insulating film under a transparent pixel electrode on a transparent substrate is provided with an aperture smaller than a plane area of the pixel electrode and a

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source electrode pattern under the pixel electrode is composed so as to cross the aperture. End portions of the gate electrode and the laminate layer are tapered. Ono fail to disclose the required method of making common line, the required method of making conducting line structures, conductive line/substrate relationship and the conductive line/substrate relationship in the required manner. However, Kim et al. disclose a liquid crystal display and a manufacturing method thereof where the required method of making common line structure is disclosed. Furthermore, Johnson discloses electric circuits having repairable circuit lines and method of making the same where the required method of making conducting line structure is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required method of making common line, the required method of making conducting line structures, conductive line/substrate relationship and the conductive line/substrate relationship in the required manner in Ono et al. as taught by Kim et al., Johnson, He et al., and Lee et al. respectively in order to make a liquid crystal display with better electrical conductivity characteristics.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (703) 305-3868. The examiner can normally be reached on M - F 8:00 - 5:00.

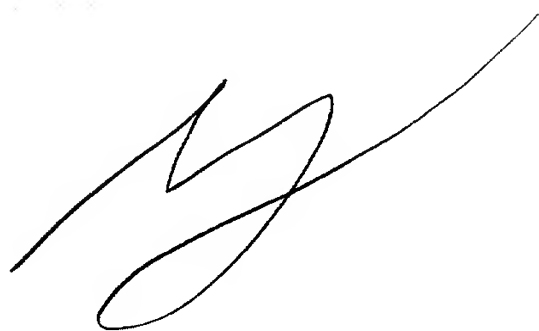
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

FE

December 15, 2003

A handwritten signature in black ink, consisting of a stylized, cursive 'F' followed by a long, sweeping horizontal line that extends to the right.